

REMARKS

Applicants concurrently file herewith a Petition for an Extension of Time, and corresponding extension of time fee, for a one-month extension of time to extend the period for response to October 1, 2005.

Claims 1, 2 and 5 are all the claims presently pending in the application. Claims 1, 2 and 5 have been amended to more particularly define the invention. Claims 3 and 4 have been canceled without prejudice or disclaimer.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicants specifically state that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 1-5 stand rejected under 35 U.S.C. §102(b) as being anticipated by Japanese Patent 2001-131712 (hereinafter "JP '172"). Claims 1-3 and 5 stand rejected under 35 U.S.C. §102(b) as being anticipated by Takemura, et al. (U.S. Patent No. 6,409,846; hereinafter "Takemura"). Claims 1, 2, and 5 stand rejected under 35 U.S.C. §102(b) as being anticipated by Tanaka, et al. (U.S. Patent No. 6,086,686; hereinafter "Tanaka '686") or Tanaka, et al. (U.S. Patent No. 5,988,042; hereinafter "Tanaka '042").

These rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

The claimed invention (e.g., as defined by exemplary claim 1) is directed to a bearing part including damping steel. The damping steel includes from 0.2% to 0.6 % by weight of C, from 5.0% to 10.0 % by weight of Cr, from 0.2% to 1.3 % by weight of Si, from 0.05% to

0.20 % by weight of N, and Fe and impurities. The damping steel is heated for austenization, cooled in oil, treated for subzero cooling, and tempered.

For recent machinery, noiselessness is an important factor. Thus, it is desired that bearings provide a required noiselessness. Certain conventional bearings have been developed that are made of a damping steel in an effort to provide the required noiselessness. However, these conventional bearings require a carbonization or carbonitriding treatment to form a hardened layer on their surfaces.

The claimed invention of exemplary claim 1, on the other hand, provides a bearing part including damping steel including from 5.0% to 10.0 % by weight of Cr. The damping steel is heated for austenization, cooled in oil, treated for subzero cooling, and tempered (e.g., see Application at page 4, lines 5-15). This combination of features is important for improving the dampability of bearing parts (see Application at page 3, lines 2-4).

II. PRIOR ART REFERENCES

A. The JP '712 Reference

The Examiner alleges that JP '712 teaches the claimed invention of claims 1-5. Applicants respectfully submit, however, that JP '712 does not teach or suggest each and every feature of the claimed invention.

That is, JP '712 does not teach or suggest a damping steel including "*from 5.0% to 10.0% by weight of Cr*" as recited in claim 1.

The Examiner attempts to rely on Table 1 and paragraph 17 of JP '712 to support her allegation. The Examiner, however, is clearly incorrect.

That is, nowhere in this table nor this passage (nor anywhere else for that matter) does JP '712 teach or suggest a damping steel including from 5.0% to 10.0% by weight of Cr. Indeed, Table 1 of JP '712 merely provides several example alloys, some of which include an

amount of Cr (e.g., alloy 1 includes 9.1% by weight Cr) that is within the claimed range recited in exemplary claim 1.

Applicants point out that a specific range or other variable in a claim may provide patentable weight to a claim if the applicant can show that the particular range is important (see M.P.E.P. 2144.05). In order to anticipate this claimed ratio, the specific limitation must be disclosed in the reference with “sufficient specificity to constitute an anticipation under the statute” (see M.P.E.P. 2131.03). Nowhere does JP ‘712 provide the specific range recited in exemplary claim 1. Indeed, as indicated above, JP ‘712 merely provides several alloys having exemplary amounts of Cr.

In contrast, the Applicants have discovered a specific range for the amount of Cr included in a damping steel that achieves a recognized result. The specific Cr amount range recited in claim 1 improves the dampability of the damping steel. That is, Applicants have discovered that Cr improves dampability, but if an amount of Cr is less than 5.0% by weight, it is ineffective in improving dampability. Additionally, if the Cr content is greater than 10.0% by weight, then carbide may be readily formed in the damping steel, which reduces the toughness of the damping steel (see Application at page 4, lines 5-15). The range for the amount of Cr recited in exemplary claim 1 is important for achieving the desired results of the claimed invention.

Therefore, Applicants submit that the specific range recited in exemplary claim 1 clearly shows a technical effect and is not arbitrarily selected.

Furthermore, Applicants submit that if the Examiner alleges that Applicants have merely discovered an optimum or workable range of a result effective variable, that the M.P.E.P. provides that “[a] particular parameter must first be recognized as a result-effective variable, i.e., **a variable which achieves a recognized result**, before the determination of the optimum or workable ranges of said variable might be characterized as routine

experimentation” (M.P.E.P. 2144.05) (emphasis added). Here, JP ‘172 does not suggest any result as being effected by the amount of Cr in a composition of a damping steel, let alone teach or suggest optimizing an amount of Cr for providing the desired results of the claimed invention.

That is, nowhere does JP ‘172 teach or suggest that the amount of Cr may have any effect on the dampability of the damping steel. Therefore, it is clearly unreasonable to suggest that these references teach or suggest that an amount of Cr in a composition of a damping steel is merely a result-effective variable.

Moreover, JP ‘712 does not teach or suggest “*wherein the damping steel is heated for austenization, cooled in oil, treated for subzero cooling, and tempered*” as recited in exemplary claim 1.

Indeed, JP ‘712 does not even mention a heating treatment, let alone teach or suggest a treatment of subzero cooling as recited in the claimed invention.

Additionally, Applicants point out that it appears that the Examiner is relying upon a translation of JP ‘172. Therefore, Applicants request the Examiner to provide us with the translation of JP ‘172 that he is relying upon.

Therefore, Applicants submit that JP ‘712 does not teach or suggest each and every feature of the claimed invention. Therefore, the Examiner is respectfully requested to reconsider and withdraw this rejection.

B. The Takemura Reference

The Examiner alleges that Takemura teaches the claimed invention of claims 1-3 and 5. Applicants submit, however, that Takemura does not teach or suggest each and every feature of the claimed invention.

That is, Takemura does not teach or suggest a damping steel including “*from 5.0% to 10.0% by weight of Cr*” as recited in claim 1.

The Examiner attempts to rely on Tables 1-5 of Takemura to support her allegation. The Examiner, however, is clearly incorrect.

That is, nowhere in these tables (nor anywhere else for that matter) does Takemura teach or suggest a damping steel including from 5.0% to 10.0% by weight of Cr. Indeed, Tables 1-5 of Takemura merely provide several example alloys, some of which include an amount of Cr that is within the claimed range recited in exemplary claim 1. Furthermore, Takemura states that the amount of Cr in the alloy is between 11% to 17% by weight (see Takemura at column 4, lines 32-51).

Applicants point out that a specific range or other variable in a claim may provide patentable weight to a claim if the applicant can show that the particular range is important (see M.P.E.P. 2144.05). In order to anticipate this claimed ratio, the specific limitation must be disclosed in the reference with “sufficient specificity to constitute an anticipation under the statute” (see M.P.E.P. 2131.03). Nowhere does Takemura provide the specific range recited in exemplary claim 1. Indeed, as indicated above, Takemura merely teaches a Cr range of 11% to 17% by weight.

In contrast, the Applicants have discovered a specific range for the amount of Cr included in a damping steel that achieves a recognized result. The specific Cr amount range recited in claim 1 improves the dampability of the damping steel. That is, Applicants have discovered that Cr improves dampability, but if an amount of Cr is less than 5.0% by weight, it is ineffective in improving dampability. Additionally, if the Cr content is greater than 10.0% by weight, then carbide may be readily formed in the damping steel, which reduces the toughness of the damping steel (see Application at page 4, lines 5-15). The range for the

amount of Cr recited in exemplary claim 1 is important for achieving the desired results of the claimed invention.

Therefore, Applicants submit that the specific range recited in exemplary claim 1 clearly shows a technical effect and is not arbitrarily selected.

Applicants also submit that if the Examiner alleges that Applicants have merely discovered an optimum or workable range of a result effective variable, that the M.P.E.P. provides that “[a] particular parameter must first be recognized as a result-effective variable, i.e., **a variable which achieves a recognized result**, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation” (M.P.E.P. 2144.05) (emphasis added). Here, the only result that Takemura suggests as being effected by the amount of Cr in a composition of a damping steel is corrosion resistance. This is clearly unrelated to optimizing an amount of Cr for providing the desired results of the claimed invention.

That is, nowhere does Takemura teach or suggest that the amount of Cr may have any effect on the dampability of the damping steel. Therefore, it is clearly unreasonable to suggest that these references teach or suggest that an amount of Cr in a composition of a damping steel is merely a result-effective variable.

Moreover, Takemura does not teach or suggest “*wherein the damping steel is heated for austenization, cooled in oil, treated for subzero cooling, and tempered*” as recited in exemplary claim 1.

Indeed, Takemura does not even mention a heating treatment, let alone teach or suggest a treatment of subzero cooling as recited in the claimed invention.

Therefore, Applicants submit that Takemura does not teach or suggest each and every feature of the claimed invention. Therefore, the Examiner is respectfully requested to reconsider and withdraw this rejection.

C. The Tanaka '686 Reference

The Examiner alleges that Tanaka '686 teaches the claimed invention of claims 1-3 and 5. Applicants respectfully submit, however, that Tanaka '686 does not teach or suggest each and every feature of the claimed invention.

That is, Tanaka '686 does not teach or suggest a damping steel including "*from 5.0% to 10.0% by weight of Cr*" as recited in claim 1.

The Examiner attempts to rely on Tables 1 and 2 of Tanaka '686 to support her allegation. The Examiner, however, is clearly incorrect.

That is, nowhere in these tables (nor anywhere else for that matter) does Tanaka '686 teach or suggest a damping steel including from 5.0% to 10.0% by weight of Cr. Indeed, Tables 1 and 2 of Tanaka '686 merely provide several example alloys, some of which include an amount of Cr that is within the claimed range recited in exemplary claim 1. Furthermore, Tanaka '686 states that the amount of Cr in the alloy is between 10% to 14% by weight (see Tanaka '686 at column 17, lines 34-42).

Applicants point out that a specific range or other variable in a claim may provide patentable weight to a claim if the applicant can show that the particular range is important (see M.P.E.P. 2144.05). In order to anticipate this claimed ratio, the specific limitation must be disclosed in the reference with "sufficient specificity to constitute an anticipation under the statute" (see M.P.E.P. 2131.03). Nowhere does Tanaka '686 provide the specific range recited in exemplary claim 1. Indeed, as indicated above, Tanaka '686 merely teaches a Cr range of 10% to 14% by weight.

In contrast, the Applicants have discovered a specific range for the amount of Cr included in a damping steel that achieves a recognized result. The specific Cr amount range recited in claim 1 improves the dampability of the damping steel. That is, Applicants have discovered that Cr improves dampability, but if an amount of Cr is less than 5.0% by weight,

it is ineffective in improving dampability. Additionally, if the Cr content is greater than 10.0% by weight, then carbide may be readily formed in the damping steel, which reduces the toughness of the damping steel (see Application at page 4, lines 5-15). The range for the amount of Cr recited in exemplary claim 1 is important for achieving the desired results of the claimed invention.

Therefore, Applicants submit that the specific range recited in exemplary claim 1 clearly shows a technical effect and is not arbitrarily selected.

Applicants also submit that if the Examiner alleges that Applicants have merely discovered an optimum or workable range of a result effective variable, that the M.P.E.P. provides that “[a] particular parameter must first be recognized as a result-effective variable, i.e., **a variable which achieves a recognized result**, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation” (M.P.E.P. 2144.05) (emphasis added). Here, the only result that Tanaka ‘686 suggests as being effected by the amount of Cr in a composition of a damping steel is corrosion resistance. This is clearly unrelated to optimizing an amount of Cr for providing the desired results of the claimed invention.

That is, nowhere does Tanaka ‘686 teach or suggest that the amount of Cr may have any effect on the dampability of the damping steel. Therefore, it is clearly unreasonable to suggest that these references teach or suggest that an amount of Cr in a composition of a damping steel is merely a result-effective variable.

Moreover, Tanaka ‘686 does not teach or suggest “*wherein the damping steel is heated for austenization, cooled in oil, treated for subzero cooling, and tempered*” as recited in exemplary claim 1.

Indeed, Tanaka ‘686 does not even mention a heating treatment, let alone teach or suggest a treatment of subzero cooling as recited in the claimed invention.

Therefore, Applicants submit that Tanaka '686 does not teach or suggest each and every feature of the claimed invention. Therefore, the Examiner is respectfully requested to reconsider and withdraw this rejection.

D. The Tanaka '042 Reference

The Examiner alleges that Tanaka '042 teaches the claimed invention of claims 1-3 and 5. Applicants respectfully submit, however, that Tanaka '042 does not teach or suggest each and every feature of the claimed invention.

That is, Tanaka '042 does not teach or suggest a damping steel including "*from 5.0% to 10.0% by weight of Cr*" as recited in claim 1.

The Examiner attempts to rely on Tables 1, 2A, 3 and 4A of Tanaka '042 to support her allegation. The Examiner, however, is clearly incorrect.

That is, nowhere in these tables (nor anywhere else for that matter) does Tanaka '042 teach or suggest a damping steel including from 5.0% to 15.0% by weight of Cr. Indeed, Tables 1, 2A, 3 and 4A of Tanaka '042 merely provide several example alloys, some of which include an amount of Cr that is within the claimed range recited in exemplary claim 1. Furthermore, Tanaka '042 states that the amount of Cr in the alloy is between 10% to 22% by weight (see Tanaka '042 at column 11, lines 11-53).

Applicants point out that a specific range or other variable in a claim may provide patentable weight to a claim if the applicant can show that the particular range is important (see M.P.E.P. 2144.05). In order to anticipate this claimed ratio, the specific limitation must be disclosed in the reference with "sufficient specificity to constitute an anticipation under the statute" (see M.P.E.P. 2131.03). Nowhere does Tanaka '042 provide the specific range as recited in exemplary claim 1. Indeed, as indicated above, Tanaka '042 merely teaches a Cr range of 10% to 22% by weight.

In contrast, the Applicants have discovered a specific range for the amount of Cr included in a damping steel that achieves a recognized result. The specific Cr amount range recited in claim 1 improves the dampability of the damping steel. That is, Applicants have discovered that Cr improves dampability, but if an amount of Cr is less than 5.0% by weight, it is ineffective in improving dampability. Additionally, if the Cr content is greater than 10.0% by weight, then carbide may be readily formed in the damping steel, which reduces the toughness of the damping steel (see Application at page 4, lines 5-15). The range for the amount of Cr recited in exemplary claim 1 is important for achieving the desired results of the claimed invention.

Therefore, Applicants submit that the specific range recited in exemplary claim 1 clearly shows a technical effect and is not arbitrarily selected.

Applicants also submit that if the Examiner alleges that Applicants have merely discovered an optimum or workable range of a result effective variable, that the M.P.E.P. provides that “[a] particular parameter must first be recognized as a result-effective variable, i.e., **a variable which achieves a recognized result**, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation” (M.P.E.P. 2144.05) (emphasis added). Here, the only result that Tanaka ‘042 suggests as being effected by the amount of Cr in a composition of a damping steel is corrosion resistance. This is clearly unrelated to optimizing an amount of Cr for providing the desired results of the claimed invention.

That is, nowhere does Tanaka ‘042 teach or suggest that the amount of Cr may have any effect on the dampability of the damping steel. Therefore, it is clearly unreasonable to suggest that these references teach or suggest that an amount of Cr in a composition of a damping steel is merely a result-effective variable.

Moreover, Tanaka '042 does not teach or suggest "*wherein the damping steel is heated for austenization, cooled in oil, treated for subzero cooling, and tempered*" as recited in exemplary claim 1.

Indeed, Tanaka '042 does not even mention a heating treatment, let alone teach or suggest a treatment of subzero cooling as recited in the claimed invention.

Therefore, Applicants submit that Tanaka '042 does not teach or suggest each and every feature of the claimed invention. Therefore, the Examiner is respectfully requested to reconsider and withdraw this rejection.

III. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicants submit that claims 1, 2 and 5, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

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Scott M. Tulino, Esq.
Registration No. 48,317

Sean M. McGinn, Esq.
Registration No. 34,386

**MCGINN INTELLECTUAL PROPERTY
LAW GROUP, PLLC**
8321 Old Courthouse Road, Suite 200
Vienna, VA 22182-3817
(703) 761-4100
Customer No. 21254